# NATURAL HISTORY

THE MAGAZINE OF
THE AMERICAN MUSEUM OF NATURAL HISTORY

VOLUME LXVII
1958

TEN ISSUES A YEAR

*Published by*
THE AMERICAN MUSEUM OF NATURAL HISTORY
NEW YORK, N. Y.

# CONTENTS OF VOLUME LXVII


JANUARY, No. 1

Letters ... 1
Reviews: ... RICHARD EVANS SCHULTES 4
An Epic Work in Ethnobotany
Man and the Heights ... MARSHALL T. NEWMAN 9
Biology and the Fish Fancier ... MYRON GORDON 20
The Nature of Symmetry ... BRIAN H. MASON 26
Sky Schedule ... K. L. FRANKLIN 32
Legendary Angkor ... 34
Great White Heron ... ANDREW AND ROBERT MEYERRIECKS 52

FEBRUARY, No. 2

Letters ... 57
Reviews: ... CHRISTOPHER GEROULD 60
Pacific Primitives
Origin of the Dog ... EDWIN H. COLBERT 65
The Last of the Reindeer Lapps ... ERNST MANKER 70
Insect Acrobat ... C. HOWARD CURRAN 82
Symbiosis: Part II
The Remarkable Lichens ... I. MACKENZIE LAMB 86
Child and Nature ... Photographs by ARLINE STRONG 94
Grand Canyon of the Colorado ... JOSEPH WOOD KRUTCH 98
Dry Valley ... WALTER SULLIVAN 112

MARCH, No. 3

Letters ... 113
Reviews: ... GEORGE GAYLORD SIMPSON 116
How the Animals Got to Where We Now Find Them
Aqualung Archeology ... STEPHAN F. DEBORHEGYI 120
A Collection of pre-Columbian Fine Art ... Photographs by NICKOLAS MURAY 126
The Indonesian Giant ... A. HOOGERWERF 136
Omoriori: Smeller of Witches ... ROBERT LEVINE 142
The Need to Classify ... ROGER L. BATTEN 148
A Tidal Zone Resident ... WILLIAM N. TAVOLGA 156

APRIL, No. 4

Letters ... 169
Reviews: ... JOHN HAY 172
Three Studies in Ecology
Easter and the Calendar ... THOMAS D. NICHOLSON 176
The First Voices of Spring ... CHARLES M. BOGERT 182
On Estimating Ages ... LORUS AND MARGERY MILNE 190
Hunters of Africa ... PETER MOLLOY 198
Les Iles Marquises: Part I ... HARRY L. SHAPIRO 208
New Fossil Find ... Photographs by HAL ROTH 223

MAY, No. 5

Reviews in Brief ... 228
Coming of the Alewives ... JOHN HAY 232
Tyto alba: Part I ... E. THOMAS GILLIARD 238
South Across the Sahara ... CARLETON S. COON 246
Photographs by PETER HAEBERLIN
Nocturnal Cricket's Shelter ... ROSS E. HUTCHINS 258
Les Iles Marquises: Part II ... HARRY L. SHAPIRO 262
White Dragon Lizard ... F. J. MITCHELL AND H. A. LINDSAY 277

JUNE – JULY, No. 6

Letters ... 338
Reviews: ... 284
Children's Books for Summer
Man as a Hunter: Part I ... JOHN MARSHALL 291
Sky Reporter ... K. L. FRANKLIN 310
A Summer Star Guide ... HENRY M. NEELY 312
Tyto alba: Part II ... ROGER S. PAYNE AND 316
Marksman of the Darkness ... WILLIAM H. DRURY, JR.
A Misspent Youth ... CHARLES DARWIN 324
Art of Aboriginal America ... Photographs by CHARLES UHT 330
Trees' Tales ... From The Museum's new exhibit 341

AUGUST – SEPTEMBER, No. 7

Reviews: ... DEAN AMADON 348
The Nature of Extinction
Sky Reporter ... HENRY M. NEELY 374
The McGee Fire:
Holocaust in California ... GEORGE BALLIS 356
Symbiosis: Part III
A Case of Peculiar Parasitism ... ASHER E. TREAT 366
Man as a Hunter: Part II
Huntsmen of Nyae Nyae ... JOHN MARSHALL 376
The Wakulla Cave ... STANLEY J. OLSEN 396
A Camera Looks at Plants ... RUTHERFORD PLATT 404

OCTOBER, No. 8

Reviews: ... JAMES W. ATZ 412
Man's View of the Animals
Sky Reporter ... HENRY M. NEELY 436
The Redirected Career of a Naturalist ... ALDEN STEVENS 418
The Deadly Glossina ... WILLIAM A. MCDONALD 426
IGY Eclipse ... THOMAS D. NICHOLSON 432
Sanctuary in Andalucia ... GUY MOUNTFORT 438
Chiroptera of New Guinea ... HOBART M. VAN DEUSEN AND RUSSELL F. PETERSON 452

NOVEMBER, No. 9

Reviews in Brief ... 468
Sky Reporter ... HENRY M. NEELY 485
The Sun's Flares and Earth ... R. GRANT ATHAY 474
Darwin's Worms ... GEORGE ZAPPLER 488
Abscission ... ROBERT M. MUIR AND ROBERT E. YAGER 498
The Ancient East ... WALTER A. FAIRSERVIS, JR. 504
Identifying Birds' Nests: ... 516
A Naturalist's Notebook Quiz

DECEMBER, No. 10

Reviews: ... 532
Children's Books for Christmas
Sky Reporter ... HENRY M. NEELY 587
The Great Whales of the Antarctic ... ROSS COCKRILL 538
The Animal Lore of the Past:
Two Medieval Bestiaries ... 558
Scrutinizing the Microcosm ... HUNTINGTON SHELDON 568
Concerning Quetzals ... N. PELHAM WRIGHT 580
Celestial Myth Revisited ... WALT KELLY 586
Lens for a Fungus ... Photographs by ERIC V. GRAVE 590

# SCIENTIFIC PUBLICATIONS OF

# THE AMERICAN MUSEUM OF NATURAL HISTORY

**January — December**

**1958**

THE MUSEUM's publications may be classed in three groups: NOVITATES — pamphlet-sized publications, uniformly priced at $.25; the BULLETIN—separate articles, individually priced; and the ANTHROPOLOGICAL PAPERS, as well as miscellaneous publications—also individually priced. The following titles have appeared during January—December, 1958:

AUFENBERG, WALTER. A new genus of colubrid snake from the Upper Miocene of North America. NOVITATES, No. 1874, 16 pp., 3 figs., 2 tables (February 27)

BARNES, ROBERT D. North American jumping spiders of the subfamily Marpissinae (Araneae, Salticidae). NOVITATES, No. 1867, 50 pp., 75 figs. (January 2)

BATTEN, ROGER LYMAN. Permian Gastropoda of the southwestern United States, 2. Pleurotomariacea, Portlockiellidae, Phymatopleuridae and Eotomariidae. BULLETIN, Vol. 114, art. 2, pp. 153-246, figs. 1-17 pls. 32-42, tables 1-29 (March 3)

BELL, A. WEIR. The anatomy of the oligochaete *Enchytraeus albidus*, with a key to the species of the genus *Enchytraeus*. NOVITATES, No. 1902, 13 pp., 10 figs. (July 22)

CAHN, PHYLLIS H. Comparative optic development in *Astyanax mexicanus* and in two of its blind cave derivatives. BULLETIN, Vol. 115, art. 2, pp. 69-112, pls. 11-27, tables 1-11 (May 5)

CHAMBERLIN, RALPH V., and WILLIS J. GERTSCH. The Spider Family Dictynidae in America North of Mexico. BULLETIN, Vol. 116, art. 1, pp. 1-152, figs. 1-37, pls. 1-47 (October 20)

COLBERT, EDWIN H., and DONALD BAIRD. Coelurosaur bone casts from the Connecticut Valley Triassic. NOVITATES, No. 1901, 11 pp., 2 figs., 1 table (July 22)

COLBERT, EDWIN H., and JOHN H. OSTROM. Dinosaur stapes. NOVITATES, No. 1900, 20 pp., 11 figs. (July 22)

DE CASTRO, ALCEU LEMOS. *Benthanoscia longicaudata*, a new genus and species of terrestrial isopod of the family Oniscidae (Isopoda, Oniscoidea). NOVITATES, No. 1884, 7 pp., 14 figs. (March 21)

DE CASTRO, ALCEU LEMOS. On the systematic position of some American species of *Philoscia* Latreille (Isopoda, Oniscoidea). NOVITATES, No. 1908, 10 pp., 19 figs. (August 13)

DOWLING, HERNDON G. Pleistocene snakes of the Ozark Plateau. NOVITATES, No. 1882, 9 pp. (February 28)

DUELLMAN, WILLIAM E. A monographic study of the colubrid snake genus *Leptodeira*. BULLETIN, Vol. 114, art. 1, pp. 1-152, figs. 1-25, pls. 1-31, maps. 1-25, tables 1-30 (February 24)

EMERSON, WILLIAM K. Results of the Puritan-American Museum of Natural History expedition to western Mexico. 1. General account. NOVITATES, No. 1894, 25 pp., 9 figs. (July 22)

EMERSON, WILLIAM K., and WARREN O. ADDICOTT. Pleistocene invertebrates from Punta Baja, Baja California, Mexico. NOVITATES, No. 1909, 11 pp., 2 figs., 2 tables (August 13)

FORSTER, RAYMOND R. Spiders of the family Symphtognathidae from North and South America. NOVITATES, No. 1885, 14 pp., 27 figs. (March 21)

GATES, G. E. On a hologynous species of the earthworm genus *Diplocardia*, with comments on oligochaete hologyny and "Consecutive hermaphroditism." NOVITATES, No. 1886, 9 pp. (March 21)

GATES, G. E. On some miscellaneous lots of earthworms belonging to THE AMERICAN MUSEUM OF NATURAL HISTORY. NOVITATES, No. 1887, 11 pp. (March 21)

GATES, G. E. On some species of the Oriental earthworm genus *Pheretima* Kinberg, 1867, with key to species reported from the Americas. NOVITATES, No. 1888, 33 pp., table 1 (March 21)

GERTSCH, WILLIS J. The spider family Hypochilidae. NOVITATES, No. 1912, pp. 1-28, figs. 1-50 (October 6)

GERTSCH, WILLIS J. The spider family Diguetidae. NOVITATES, No. 1904, 24 pp., 19 figs. (August 13)

GERTSCH, WILLIS J. Results of the Puritan-American Museum expedition to western Mexico. 4. The scorpions. NOVITATES, No. 1903, 20 pp., 6 tables (August 13)

GERTSCH, WILLIS J. The spider genus *Loxosceles* in North America, Central America and the West Indies. NOVITATES, No. 1907, 46 pp., 97 figs. (August 13)

GOODWIN, GEORGE G. Two new mammals from Mexico. NOVITATES, No. 1871, 3 pp. (February 26)

GOODWIN, GEORGE G. Three new bats from Trinidad. NOVITATES, No. 1877, 6 pp., 2 tables (February 28)

HOFF, C. CLAYTON. List of the pseudoscorpions of North America north of Mexico. NOVITATES, No. 1875, 50 pp. (February 28)

HOFF, C. CLAYTON, and DWAIN PARRACK. Results of the Archbold expeditions. No. 77. Two species of *Megachernes* (Pseudoscorpionida, Chernetidae). NOVITATES, No. 1881, 9 pp., 2 figs. (February 28)

JACOBSON, MORRIS K. Results of the Puritan-American Museum of Natural History expedition to western Mexico. 3. The terrestrial mollusks. NOVITATES, No. 1899, 14 pp., 2 figs., 1 table (July 22)

LAMONTE, FRANCESCA and others. On the biology of the Atlantic marlins, *Makaira ampla* (Poey) and *Makaira albida* (Poey). Scales of the Atlantic species of *Makaira*, by Francesca R. LaMonte. Notes on the alimentary, excretory and reproductive organs of Atlantic *Makaira*, by Francesca R. LaMonte. Relative weights of some viscera in the Atlantic marlins, by Louis A. Krumholz. Some foods of marlins near Bimini, Bahamas, by Louis A. Krumholz and Donald P. deSylva. Juvenile blue marlin, *Makaira ampla* (Poey), from

Miami, Florida, and West End, Bahamas, by Donald P. deSylva. BULLETIN, Vol. 114, art. 5, pp. 373-416, figs. 1-14, pls. 75-82, tables 1-7 (March 24)

LANE, FREDERICO. A new Neotropical genus of Ischiolonchini (Coleoptera, Lamiidae). NOVITATES, No. 1889, 17 pp., 2 figs. (March 21)

MCDUNNOUGH, JAMES H. A new species of *Coleophora* belonging to the *duplicis-bidens* group. NOVITATES, No. 1905, 5 pp., 3 figs. (August 13)

MCDUNNOUGH, JAMES H. Heretofore unpublished illustrations of coleophorid genitalia, with notes (Lepidoptera). NOVITATES, No. 1880, 11 pp., 15 figs. (February 28)

MCDOWELL, SAMUEL BOOKER, JR. The Greater Antillean insectivores. BULLETIN, Vol. 115, art. 3, pp. 113-214, figs. 1-46, tables 1, 2 (May 5)

MARCUS, ERNST. On western Atlantic opisthobranchiate gastropods. NOVITATES, No. 1906, 82 pp., 111 figs. (August 13)

MOORE, JOSEPH CURTIS. New genera of East Indian squirrels. NOVITATES, No. 1914, pp. 1-5 (October 22)

MOORE, JOSEPH CURTIS. A beaked whale from the Bahama Islands and comments on the distribution of *Mesoplodon densirostris*. NOVITATES, No. 1897, 12 pp., 6 figs., 2 tables (July 22)

MOORE, JOSEPH CURTIS. A new species and redefinition of the squirrel genus *Prosciurillus* of Celebes. NOVITATES, No. 1890, 5 pp. (March 21)

MOORE, JOSEPH CURTIS. New striped tree squirrels from Burma and Thailand. NOVITATES, No. 1879, 6 pp., 2 tables (February 28)

NEWELL, NORMAN D. A note on Permian crassatellid pelecypods. NOVITATES, No. 1878, 6 pp., 3 figs. (February 28)

NICHOLS, J. T. A new goby and other fishes from Formosa. NOVITATES, No. 1876, 7 pp., 1 fig. (February 28)

NORRIS, KENNETH STAFFORD. The evolution and systematics of the iguanid genus *Uma* and its relation to the evolution of other North American desert reptiles. BULLETIN, Vol. 114, art. 3, pp. 247-326, figs. 1-17, pls. 43-6, tables 1, 2 (March 10)

PARKES, KENNETH C. A new race of the blue-headed fantail (*Rhipidura cyaniceps*) from northern Luzon, Philippine Islands. NOVITATES, No. 1891, 5 pp., 1 fig. (March 26)

RASQUIN, PRISCILLA. Ovarian morphology and early embryology of the pediculate fishes *Antennarius* and *Histrio*. BULLETIN, Vol. 114, art. 4, pp. 327-372, figs. 1, 2, pls. 47-74, tables 1, 2 (March 17)

RASQUIN, PRISCILLA. Studies in the control of pigment cells and light reactions in recent teleost fishes. Part I: Morphology of the pineal region. Part II: Reactions of the pigmentary system to hormonal stimulation. BULLETIN, Vol. 115, art. 1, pp. 1-68, fig. 1, pls. 1-10, tables 1-5 (April 14)

RINDGE, FREDERICK H. Descriptions of and notes on North American Geometridae (Lepidoptera), No. 3. NOVITATES, No. 1910, pp. 1-24, figs. 1-26 (October 6)

RINDGE, FREDERICK H. Descriptions of and notes on North American Geometridae (Lepidoptera), No. 2. NOVITATES, No. 1872, 23 pp., 29 figs. (February 26)

RUCKES, HERBERT. New genera and species of Neotropical Discocephaline and halyine pantaomids (Heteroptera, Pentatomidae). NOVITATES, No. 1868, 27 pp., 4 figs. (January 31)

SCHWARTZ, ALBERT. Four new frogs of the genus *Eleutherodactylus* (Leptodactylidae) from Cuba. NOVITATES, No. 1873, 20 pp., 3 figs. (February 27)

SNYDER, FRED M. Muscidae from the Bahama Islands (Diptera). NOVITATES, No. 1893, 4 pp. (March 26)

SNYDER, FRED M. A review of New World *Neodexiopsis* (Diptera, Muscidae). The *Ovata* Group. NOVITATES, No. 1892, 27 pp., 16 figs. (March 26)

SQUIRES, DONALD F. Stony corals from the vicinity of Bimini, Bahamas, British West Indies. BULLETIN, Vol. 115, art. 4, pp. 215-262, figs. 1-4, pls. 28-43, tables 1, 2 (May 19)

SQUIRES, DONALD F. Some Upper Creataceous corals from New Jersey. NOVITATES, No. 1911, pp. 1-7, figs. 1-6 (October 6)

SQUIRES, DONALD F., and EDWARD J. HAWKINS. Type Specimens of invertebrate fossils in the collections of the Department of Geology and Paleontology. 1. Porifera. NOVITATES, No. 1913, pp. 1-22 (October 22)

STEBBINS, ROBERT C. A new alligator lizard from the Panamint Mountains, Inyo County, California. NOVITATES, No. 1883, 27 pp., 6 figs., 4 tables (March 21)

STEBBINS, ROBERT C., and RICHARD M. EAKIN. The role of the "third eye" in reptilian behavior. NOVITATES, No. 1870, 40 pp., 14 figs., 4 tables (February 26)

TANNER, JAMES T., and JOHN WILLIAM HARDY. Summer birds of the Chiricahua Mountains, Arizona. NOVITATES, No. 1866, 11 pp. (January 2)

VAURIE, CHARLES. Systematic notes on Palearctic birds. No. 32. Oriolidae, Dicruridae, Bombycillidae, Pycnonotidae, Nectariniidae and Zosteropidae. NOVITATES, No. 1869, 28 pp., 1 table (January 31)

VAURIE, CHARLES. Systematic notes on Palearctic birds. No. 33. A second review of *Carpodacus puniceus*, with a study of its plumages, and a supplementary note on *Emberiza schoeniclus*. NOVITATES, No. 1898, 10 pp., 3 figs. (July 22)

VAURIE, PATRICIA. A revision of the genus *Diplotaxis* (Coleoptera, Scarabaeidae, Melonthinae). BULLETIN, Vol. 115, art. 5, pp. 263-396, figs. 1-158, tables 1-5. (October 15)

ZWEIFEL, RICHARD G. Results of the Puritan-American Museum of Natural History expedition to western Mexico. 2. Notes on reptiles and amphibians from the Pacific coastal islands of Baja California. NOVITATES, No. 1895, 17 pp., 1 fig. (July 22)

ZWEIFEL, RICHARD G. Results of the Archbold expeditions. No. 78. Frogs of the Papuan hylid genus *Nyctimystes*. NOVITATES, No. 1896, 51 pp., 21 figs., 2 tables (July 22)

# INDEX TO VOLUME LXVII

## TITLES, SUBJECTS, AND AUTHORS

(Titles of articles are in capital letters)


### A

ABSCISSION, Robert M. Muir and Robert E. Yager, 498
Acacia, bullhorn, on, 50
Alewives, 233
Altitude, man's adaptation to, 11
ANCIENT EAST, THE, Walter A. Fairservis, Jr., 504
Angkor, 35
Andean Indians, 11
ANIMAL LORE OF THE PAST, THE: TWO MEDIEVAL BESTIARIES, 558
Ants, 279
AQUALUNG ARCHEOLOGY, Stephan F. deBorhegyi, 120
ARCHEOLOGICAL STUDIES: LEGENDARY ANGKOR, 34; AQUALUNG ARCHEOLOGY, 120; A COLLECTION OF PRE-COLUMBIAN FINE ART, 126; LES ILES MARQUISES, Part I, 208; Part II, 262; ART OF ABORIGINAL AMERICA, 330; THE ANCIENT EAST, 504
Art, pre-Columbian, 126
Athay, R. Grant, THE SUN'S FLARES AND EARTH, 474

### B

Ballis, George, THE MCGEE FIRE: HOLOCAUST IN CALIFORNIA, 356
Barn owl, 239, 316; (May Cover) Lee Boltin
Bats, 367, 452
Batten, Roger, THE NEED TO CLASSIFY, 148
Bestiaries: Persian and Old English, 558
BIOLOGICAL STUDIES: SYMBIOSIS: Part II: THE REMARKABLE LICHENS, 86; Part III: A CASE OF PECULIAR PARASITISM, 366
BIOLOGY AND THE FISH FANCIER, Myron Gordon, 20
Bird, quetzal, 580
Birds' nests, identifying, 516
Bogert, Charles M., THE FIRST VOICES OF SPRING, 182
Boltin, Lee, Seashells (March Cover), Marquesas (April Cover), Barn owl (May Cover)
BOOK REVIEWS
*All About Animals and Their Young*, 534
*All About Great Rivers of the World*, 286
*All About Monkeys*, 534
*All About Strange Beasts of the Present*, 285
*Ancient Elephants*, 537
*Animal Behavior*, 412
*Animal Tails*, 286
*Animal Tracks and Hunter Signs*, 534
*Animals in Motion*, 470
*Anthropology and Human Nature*, 109
*Ants, The*, 472
*Arctic Tundra, The*, 285
*Arizona's Meteorite Crater*, 109
*Be Your Own Nurseryman*, 109
*Below the Surface*, 533
*Big Jack*, 286
*Birds of the World*, 592
*Boy Beneath the Sea*, 532
*Busy Water*, 286
*Butterflies and Moths*, 592
*Columbia River, The*, 469
*Constructing an Astronomical Telescope*, 109
*Discovering Nature*, 533
*Discovery of the Universe, The*, 229
*Earth and its Atmosphere, The*, 468
*Earth, Moon and Planets*, 527
*Electrons Go to Work*, 469
*Exotic Plants of the World*, 108
*Exotica*, 272
*Exploring by Satellite*, 109
*Exploring the Distant Stars*, 527
*Exploring the Planets*, 592
*Exploring the Sun*, 592
*Extinct and Vanishing Birds of the World*, 348
*First Days of the World, The*, 285
*First People of the World, The*, 285
*Fishes of the World*, 108
*Golden Book of Animals, The*, 286
*Gregor Mendel*, 533
*Guide to the Fishes of New Mexico*, 108
*Harvard Case Histories in Experimental Science*, 468
*Home: The Tale of a Mouse*, 534
*Hoofs, Claws and Antlers*, 537
*How Does a Garden Grow*, 289
*How to Understand Animal Talk*, 286
*Illustrated Guide to Fossil Collecting, An*, 108
*Infancy in Animals*, 219
*Kangaroos and Other Animals With Pockets*, 537
*Kingdom of the Beasts*, 472
*Last Cannibals, The*, 60
*Let's Go to a Planetarium*, 594
*Listening Point*, 533
*Little Red Newt*, 534
*Living Past, The*, 221
*Living Reptiles of the World*, 526
*Looking At the Stars*, 594
*Man: His First Million Years*, 221
*Manual for Neanderthals, A*, 221
*Mushrooms, Russia and History*, 4
*Nature and the American*, 228
*Nature Is Your Guide*, 469
*New Bottles for New Wine*, 469
*North American Deserts, The*, 172
*Of Men and Marshes*, 172
*Old Bill, The Whooping Crane*, 289
*1001 Questions Answered about the Weather*, 220
*Orbit*, 532
*Orchids for Everybody*, 109
*Ostriches*, 289
*Pacific Sea Shells*, 470
*Paddling of Ducks, A*, 220
*Penn's Woods West*, 532
*Pets From the Pond*, 289
*Poison on the Land*, 469
*Prehistoric Animals*, 592
*Return to the Islands*, 60
*Salt-water Fishes for the Home Aquarium*, 526
*Science in Progress, Tenth Series*, 468
*Science in Your Own Backyard*, 285
*Scientist of Two Worlds, A*, 533
*Sea, The*, 592
*See Through the Lake*, 286
*See Up the Mountain*, 592
*Shooting Stars*, 594
*Stars, The*, 526
*Story of Life, The*, 469
*Strange Wonders of the Sea*, 108
*Sun and its Family, The*, 527
*Think, Mr. Platypus*, 592
*Trees*, 220
*Underground Riches*, 286
*Vertebrates of the United States*, 62
*Virus in the Cell*, 469
*Warblers of North America, The*, 220
*Water*, 458
*We Live by the Sun*, 469
*Whitetail, the Story of a Prairie Dog*, 534
*Wider Than the Sky*, 532
*Wild Folk in the Desert*, 537
*Wild Folk in the Mountains*, 286
*Winter-sleeping Wildlife*, 534
*World Beneath the Waves*, 172
*World of Science, The*, 532
*Yulengor-Nomads of Arnhem Land*, 60
*Zoogeography*, 116
Bushmen, 291

### C

Calendar, 176
CAMERA LOOKS AT PLANTS, A, Rutherford Platt, 404
CASE OF PECULIAR PARASITISM, A, Asher A. Treat, 366
CELESTIAL MYTH REVISITED, Walt Kelly, 586
CHILD AND NATURE, Arline Strong, 94
CHIROPTERA OF NEW GUINEA, Hobart M. Van Deusen and Russell F. Peterson, 452
Classification, in science, 148
Cockrill, Ross, THE GREAT WHALES OF THE ANTARCTIC, 538
Colbert, Edwin H., ORIGIN OF THE DOG, 65
COLLECTION OF PRE-COLUMBIAN FINE ART, A, Nickolas Muray, 126
COMING OF THE ALEWIVES, John Hay, 232
CONCERNING QUETZALS, N. Pelham Wright, 580
Coon, Carleton S., and Peter Haeberlin, SOUTH ACROSS THE SAHARA, 246
Coto Doñana, 438
Cricket, leaf-rolling, 258
Crystals, symmetry of, 27
Curran, C. Howard, INSECT ACROBAT, 70

### D

Darwin, Charles, A MISSPENT YOUTH, 324
DARWIN'S WORMS, Georg Zappler, 488
DEADLY GLOSSINA, THE, William A. McDonald, 426
DeBorhegyi, Stephan F., AQUALUNG ARCHEOLOGY, 120
Dinosaur legbone, on, 113
Dog, origin of, 65
Drury, William H. Jr., and Roger S. Payne, TYTO ALBA, Part II, MARKSMAN OF THE DARKNESS, 316
DRY VALLEY, Walter Sullivan, 112

### E

Eagle, short toed, 448
Eagle, Spanish Imperial, 445
EASTER AND THE CALENDAR, Thomas D. Nicholson, 176
Eclipse, solar, 433
Egret, 451
Elephants, Thirteenth Century, Persian Mss. (December Cover)
ENVIRONMENTAL STUDIES: MAN AND THE HEIGHTS, 9; MAN AS A HUNTER: Part I, 291; Part II, 376
ETHNOLOGICAL STUDIES: THE LAST OF THE REINDEER LAPPS, 70; OMORIORI, SMELLER OF WITCHES, 124; HUNTERS OF AFRICA, 198; LES ILES MARQUISES: Part I, 208; Part II, 262; SOUTH ACROSS THE SAHARA, 247

### F

Fairservis, Walter A., Jr., THE ANCIENT EAST, 504
Fern, cinnamon, 408
FIRST VOICES OF SPRING, THE, Charles M. Bogert, 182
Flares, solar, 474
Fly, common, 83
Forest fire, 357
Fossil insects, 223
Franklin, K. L., SKY REPORTER, 310
Franklin, K. L., SKY SCHEDULE, 32
Frog calls, 182
Fula tribe, 255

### G

Gilliard, E. Thomas, TYTO ALBA, Part I, 238
Goby, 156
Gordon Myron, BIOLOGY AND THE FISH FANCIER, 20
GRAND CANYON OF THE COLORADO, Joseph Wood Krutch, 98

Grave, Eric V., photographs by, LENS FOR A FUNGUS, 590
GREAT WHALES OF THE ANTARCTIC, THE, Ross Cockrill, 538
GREAT WHITE HERON, Andrew and Robert Meyerriecks, 52
Griffon, 444

## H

Haeberlin, Peter, SOUTH ACROSS THE SAHARA, 246
Hausa tribe, 254
Hay, John, COMING OF THE ALEWIVES, 232
Heron, 440, 450
Heron, Great White, 53 (January Cover), Andrew Meyerriecks
Herring, 233
Hoogerwerf, A., THE INDONESIAN GIANT, 136
Hummingbird feeders, on, 338
HUNTERS OF AFRICA, Peter Molloy, 198
HUNTSMEN OF NYAE NYAE, 376
Hutchins, Ross E., NOCTURNAL CRICKET'S SHELTER, 258

## I

IDENTIFYING BIRDS' NESTS, 516
IGY ECLIPSE, Thomas D. Nicholson, 432
Incas, 15, 18
INDONESIAN GIANT, THE, A. Hoogerwerf, 136
Indus Valley, study of, 504
INSECT ACROBAT, C. Howard Curran, 82
Insects, fossil, 223
International Geophysical Year, 112, 432

## K

Kalahari Desert, 293
Kelly, Walt, CELESTIAL MYTH REVISITED, 586
Kelly, Walt, Pogo, in the December sky, 586
Khmer civilization, 35
Komodo monitor, 136
Krutch, Joseph Wood, GRAND CANYON OF THE COLORADO, 98

## L

Lake Eyre, 277
Lamb, I. Mackenzie, SYMBIOSIS, Part II; THE REMARKABLE LICHENS, 86
Lapp nomad (February Cover), Sven Hörnell
LAST OF THE REINDEER LAPPS, THE, Ernst Manker, 70
Leaf-fall, autumn and general, 498
LEGENDARY ANGKOR, 34
LENS FOR A FUNGUS, photographs by Eric V. Grave, 590
LES ILES MARQUISES, Harry L. Shapiro; Part I, 208; Part II, 262
LeVine, Robert, OMORIORI: SMELLER OF WITCHES, 142
Lichens, 87
Lindsay, H. A., and F. J. Mitchell, WHITE DRAGON LIZARD, 277
Lizard, White Dragon, 277
Lunar month, 179

## M

Magpie, 440
MAN AND THE HEIGHTS, Marshall T. Newman, 9
MAN AS A HUNTER, John Marshall; Part I, 291; Part II, HUNTSMEN OF NYAE NYAE, 376
"Manafi al-Hayawân," Thirteenth Century Persian Mss. Excerpt from (December Cover)
Mandari of the Sudan, 198
Manker, Ernst, THE LAST OF THE REINDEER LAPPS, 65
Marquesas, 208, 262 (April Cover) Lee Boltin
Marshall, John, MAN AS A HUNTER, Part I, 291; Part II, HUNTSMEN OF NYAE NYAE, 376
Mason, Brian H., THE NATURE OF SYMMETRY, 26
Maya remains, 121
McDonald, William A., THE DEADLY GLOSSINA, 426
McGEE FIRE, THE: HOLOCAUST IN CALIFORNIA, George Ballis, 356
Meyerriecks, Andrew and Robert, GREAT WHITE HERON, 52
Microscopy, Electron, 568
Milkweed unfolding, 406
Milne, Lorus and Margery, ON ESTIMATING AGES, 190
MISSPENT YOUTH, A, Charles Darwin, 324
Mitchell, F. J., and H. A. Lindsay, WHITE DRAGON LIZARD, 277
Mites, parasitic, 367
Molloy, Peter, HUNTERS OF AFRICA, 198
Monitor, Komodo lizard, 136
Moth, army worm, 367
Mountfort, Guy, SANCTUARY IN ANDALUCIA, 438
Muir, Robert M. and Robert E. Yager, ABSCISSION, 498 (November Cover)
Muray, Nickolas, A COLLECTION OF PRE-COLUMBIAN FINE ART, 126
Mzabite tribe, 248

## N

NATURALIST'S NOTEBOOK:
BIOLOGY AND THE FISH FANCIER, 20; INSECT ACROBAT, 82; THE INDONESIAN GIANT, 136; WHITE DRAGON LIZARD, 277; ON ESTIMATING AGES, 190; A CAMERA LOOKS AT PLANTS, 404; IDENTIFYING BIRDS' NESTS, 516
NATURE OF SYMMETRY, THE, Brian H. Mason, 26
NEED TO CLASSIFY, THE, Roger L. Batten, 148
Neely, Henry M., SKY REPORTER, 374, 436, 485, 587
Neely, Henry M., A SUMMER STAR GUIDE, 312
NEW FOSSIL FIND, Hal Roth, 223
Newman, Marshall T., MAN AND THE HEIGHTS, 9
Nicholson, Thomas D., EASTER AND THE CALENDAR, 176; IGY Eclipse, 432
NOCTURNAL CRICKET'S SHELTER, Ross E. Hutchins, 258

## O

Olsen, Stanley J., THE WAKULLA CAVE, 396
OMORIORI: SMELLER OF WITCHES, Robert LeVine, 142
ON ESTIMATING AGES, Lorus and Margery Milne, 190
ORIGIN OF THE DOG, Edwin H. Colbert, 65
ORNITHOLOGICAL STUDIES:
TYTO ALBA, Part I, 238; Part II, 316; SANCTUARY IN ANDALUCIA, 438; THE NATURE OF EXTINCTION, 348

## P

Passenger Pigeon, 349
Payne, Roger S., and William H. Drury, Jr., TYTO ALBA, Part II, MARKSMAN OF THE DARKNESS, 316
Peterson, Russell F., and Hobart M. Van Deusen, CHIROPTERA OF NEW GUINEA, 452
Pilobolus, the fungus, 590
Plants, age of, 194
Platt, Rutherford, A CAMERA LOOKS AT PLANTS, 404
Polynesia, 262

## Q

Q'eros Indians, on, 1

## R

Rattlesnake, 193
REDIRECTED CAREER OF A NATURALIST, THE, Alden Stevens, 418
Roosevelt, Theodore, 418
Roth, Hal, NEW FOSSIL FIND, 223

## S

Sahara Desert, 247
SANCTUARY IN ANDALUCIA, Guy Mountfort, 438
SCRUTINIZING THE MICROCOSM, Huntington Sheldon, 568
Seashells (March Cover), Lee Boltin
Seeds, poison, on, 50
Sere Leaves (November Cover), Robert M. Muir and Robert E. Yager
Shaamba tribe, 248
Shapiro, Harry L., LES ILES MARQUISES, Part I, 208; Part II, 262
Sheldon, Huntington, SCRUTINIZING THE MICROCOSM, 568
Shellfish, age of, 193
SKY REPORTER, K. L. Franklin, 310
SKY REPORTER, Henry M. Neely, 374, 436, 485, 587
SKY SCHEDULE, K. L. Franklin, 32
Slug's eggs, on, 169
Solar activity, 474
Solar day, 179
SOUTH ACROSS THE SAHARA, Carleton S. Coon, 245
Squacco, 441
Star guide, 312
Starling, blue-black, spotted, 440
Stevens, Alden, THE REDIRECTED CAREER OF A NATURALIST, 418
Strong, Arline, CHILD AND NATURE, 94
Sudan, 198, 252
Sullivan, Walter, DRY VALLEY, 112
SUMMER STAR GUIDE, A, Henry M. Neely, 312
SUN'S FLARES AND EARTH, THE, R. Grant Athay, 474
SYMBIOSIS, Part II: THE REMARKABLE LICHENS, I. Mackenzie Lamb, 86
SYMBIOSIS, Part III, A CASE OF PECULIAR PARASITISM, Asher E. Treat, 366
Symmetry in nature, 27

## T

Tavolga, William N., A TIDAL ZONE RESIDENT, 156
TIDAL ZONE RESIDENT, A, William N. Tavolga, 156
Toads, 182
Treat, Asher E., SYMBIOSIS, Part III, A CASE OF PECULIAR PARASITISM, 366
Tree, annual growth of, 341
Trees, age of, 196
TREES' TALES, 341
Tsetse flies, 427
Tuareg tribe, 249
Turtle, wood, 96
TYTO ALBA, Part I, E. Thomas Gilliard, 238
TYTO ALBA, Part II, MARKSMAN OF THE DARKNESS, Roger S. Payne and William H. Drury, Jr., 316

## U

Uht, Charles, ART OF ABORGINAL AMERICA, 330
Underwater exploration, 397

## V

Van Deusen, Hobart M., and Russell F. Peterson, CHIROPTERA OF NEW GUINEA, 452
Vicos Indians, 9, 19

## W

WAKULLA CAVE, THE, Stanley J. Olsen, 396
Whale, blue, 191; antarctic, 538
WHITE DRAGON LIZARD, F. J. Mitchell and H. A. Lindsay, 277
Witchcraft, African, 143
Woodcock's mating flight, on, 169
Worms, Darwin's Study of, 488
Wright, N. Pelham, CONCERNING QUETZALS, 580

## X

X-rays in mineralogy, 30

## Y

Yager, Robert E. and Robert M. Muir, ABSCISSION, 498; (November Cover)

## Z

Zappler, Georg, DARWIN'S WORMS, 488